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# **Federal Engineering Technology**



available from

**NTIS**

National Technical Information Service  
U.S. Department of Commerce

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# Engineering content of NTIS data base is in six primary areas

For nearly 40 years NTIS has developed a vast and comprehensive data base comprised of references to more than one million research reports produced by/for the Government. This data base is unparalleled in its capacity to provide efficient and rapid retrospective access to bibliographic records as well as the reports described in the record.

A major portion of this technical information collection includes a transdisciplinary coverage of engineering information that has significant interest and lasting research value.

This coverage includes six primary areas of engineering—aeronautical, mechanical, electrical, civil, industrial, and chemical—but is not limited to these fields. Also included is information relating to ocean and marine engineering and human factors engineering.

Access to this engineering cross section of the NTIS data base can be an invaluable tool to librarians, technical information specialists, decisionmakers, and researchers in engineering organizations, universities, Government agencies—anywhere that maximum technology is of the utmost importance.

## Who prepares Government research reports?

Most Government research is conducted by U.S. corporations and universities under contract to Government agencies. The NTIS collection is the largest and best publicly available pool of widely varied research results in the world. Corporate authors of reports in the NTIS system include:

Massachusetts Institute of Technology, Allied Chemical, Harvard University, Standard Oil of Indiana, Yale University, Owens Illinois, New York University, Aluminum Co. of America, University of Pennsylvania, Combustion Engineering, Stanford University, Deere & Co., Cornell University, IBM, Texas A&M University, General Electric, University of Rochester, General Motors, Johns Hopkins University, Rockwell International, University of California, Eastman Kodak, University of Illinois, Rand Corp., University of Wisconsin, Tennessee Valley Authority, University of Michigan, International Telephone & Telegraph, Columbia University, Honeywell, University of Minnesota, Fairchild, University of Washington, Ford Motor Co., University of Chicago, Hewlett-Packard, Sperry Rand, Babcock & Wilcox, Reynolds Metals, Norton Co., Shell Oil, Union Carbide, Crown Zellerbach, Swift & Co., Monsanto, Gulf Oil, Carborundum, Kaiser Aluminum & Chemical, Control Data, RCA, and Westinghouse Electric Corporation.

# Federal software exchange program

The Federal Software Exchange Program was established in 1976 by General Services Administration (GSA) to promote Government-wide sharing of common use software owned by Federal agencies. In order to provide a central location and bibliographic control for the collection, GSA established the *Federal Software Exchange Center* (FSEC) at NTIS. State and local Governments also participate in the program under the Intergovernmental Cooperation Act. FSEC products are limited to governmental buyers.

The vehicle for Federal software information and dissemination is the *Federal Software Exchange Center* catalog. It contains software abstracts covering numerous application areas on programs that are written in a broad range of computer languages for a wide variety of hardware. The 1980 edition contains approximately 700 abstracts.

According to FPMR 101-36.1068 and 101-36.1609, before a Government agency can obtain a Delegation of Procurement Authority (DPA) to acquire software from commercial sources, it must screen available Federal ADP resources by reviewing the *Federal Software Exchange Center* catalog.

If a suitable system or program can be found in the catalog, FSEC will make it available to government users at the published price. Prices for software obtained from the exchange are nominal compared to the cost of in-house development or outside procurement. Limited technical assistance in installation and maintenance is normally available from the contributing agency or from GSA Agency Services Coordination Division on a reimbursable basis.

The 1980 edition of the catalog is available on subscription at \$75 annually but may be used for ordering purposes only by government agencies. A subscription is comprised of a cumulative issue distributed in January followed by two noncumulative update issues in May and September. Your subscription will be entered for a period covering January through December.

For more information on the *Federal Software Exchange Center* program, please telephone (703) 487-4808.

This specialized catalog is one of several designed for NTIS customers having similar interests. Other specialized catalogs are listed on page 40.

# **Engineering data on magnetic tape; software is available**

Data files and computer software sponsored by the Federal Government have been made available by NTIS since 1967. As a result, NTIS has assembled a wide variety of software and data files, pertinent to business and scientific interests, that are available for sale or lease. The present collection contains more than 1200 data files and computer programs from more than 100 Federal agencies. These cover an array of subject fields: statistics, finance, education, demography and population, health statistics, building technology, energy sources, environmental pollution and control, and many others.

## **Computer Software**

- Modeling & Simulation
- Statistical Analyses & Evaluation
- Operating Systems
- Control Systems
- Data Base Management Systems
- Search/Retrieval Systems
- Application Programs

Examples of software available from NTIS are:

- COBOL Compiler Validation System—Version 3
- FORTRAN Compiler Validation System—Version 1
- Table Producing Language (TPL)—Version 3
- Cartographic Automatic Mapping Program (CAM)
- Medicaid Management Information Systems (MMIS)
- Rural Highway Transportation Planning System

## **Data Files**

- Bibliographic
- Numeric
- Statistical
- Informational

Examples of data files available from NTIS are:

- Standard Occupational Classification Manual
- Standard Codes for Named Populated Places and Related Entities of the States of the United States
- World Data Bank, Volumes 1-5
- National Survey of Family Growth, Cycle I
- Catalog of Federal Domestic Assistance Programs
- Inventory of Energy Research & Development Information Resources in the United States
- Environmental Protection Agency (EPA) Bibliographic Data File

For more information about computer software and data files please telephone (703) 487-4808.

# 600,000-item Energy Data Base from DOE

The world's largest and most comprehensive bibliographic data base on energy is created and maintained by the Department of Energy's Technical Information Center, Oak Ridge, Tennessee and is available for lease through NTIS. The *Energy Data Base* (EDB) includes more than 600,000 items.

This is primarily a bibliographic data file relating to research, development, and demonstration projects on all aspects of energy. *EDB* started in the information programs of the Atomic Energy Commission and the Energy Research and Development Administration (ERDA), all since absorbed into DOE. The information is stored in digital form and includes citations, abstracts, and indexes for use by DOE and the general public in the United States.

Citations consist of all the data elements that describe and uniquely identify a particular information item, such as title, author's name, issuing source, type of literature, language of the item, name of the journal (when articles are selected from journals), and page count. For report items, identifying numbers, sources of availability, and prices are also given. Abstracts are included in the data base so that users can determine whether they wish to obtain a complete text.

*EDB* items are indexed by subject within the following categories.

Solar energy (also includes tidal and wind power)  
Geothermal energy  
Fossil and synthetic fuels  
  Coal  
  Petroleum and natural gas  
  Oil shales and tar sands  
  Hydrogen  
  Other synthetic and natural fuels  
Fusion energy  
Nuclear energy  
  Nuclear fuels  
  Nuclear power plants  
  Nuclear reactor technology  
Energy conservation, consumption, and utilization  
Energy policy and management  
Energy storage  
Energy conversion

Advanced automotive systems  
Electric power engineering (includes MHD, cryogenics, & superconducting transmission)  
Environmental sciences  
Biomedical sciences, health, and safety  
Physical research  
  Chemistry  
  Physics  
  Materials  
  Geosciences  
Engineering  
Particle accelerators  
Instrumentation  
Explosions  
Isotope and radiation source technology  
General and miscellaneous

For more information on leasing the *EDB*, please telephone (703) 487-4808.

All of NTIS' products and services are summarized in General Catalog No. 7 (see page 40).

# Tech Notes package combines technology of Federal agencies

*Tech Notes* pulls together into a single convenient monthly package several two-page summaries of new applications for technology developed by different Federal agencies and their contractors.

The individual *Tech Notes* entries are prepared by the various agencies and are generally patterned after the Tech Briefs pioneered by NASA, which are now part of the new package. *Tech Notes* includes the following:

## **NASA Tech Briefs**

**Army—Office of Manufacturing Technology  
(Manufacturing Technology Note)**

**Air Force—Abstracts of New Technology**

**Air Force—Manufacturing Technology**

**Navy—Manufacturing Technology**

**Navy—Technology Transfer Fact Sheets**

**Interior—Bureau of Mines Technology News**

**Agriculture—Forest Service Equip Tips**

**Commerce—NBS Staff Report**

**DOE—Union Carbide TU Bulletin,**

**Department of Energy Notes**

**NSF/RANN—UTS Briefs**

*Selected Technology for Licensing*, one-page summaries of the best Government inventions from all agencies, is another feature of the package.

To avoid overwhelming users with massive outpourings of new applications for Federal technology in all fields, *Tech Notes* is available in various subject categories. Currently these are:

**Computers, Electrotechnology, Energy, Engineering, Life Sciences, Physical Sciences, Machinery, Materials, Manufacturing, Ordnance, and Testing and Instrumentation.**

Users may subscribe to any one category or any combination of categories. Substantial discounts are offered to those who order more than one category. To qualify for the discount all categories must be mailed to the same person, to a single address. A typical monthly issue for a single category includes about 12 individual *Tech Notes*.

Most Tech Notes in the package are supported by backup material that may be obtained from NTIS when additional detailed information is required.

Prices: one category, \$50; two categories, \$95; three categories, \$135; four categories, \$170; five categories, \$205; six categories, \$240; seven categories, \$275; eight categories, \$310; nine categories, \$345; ten categories, \$380; ALL CATEGORIES \$250.

"During the past year we have found the NTIS Tech Notes to be of considerable value. At the present time we are evaluating two Tech Notes that may provide improved methods with \$200,000 annual savings."—John V. DiMatteo, Rohr Industries Inc.



# Unique Multilingual Aeronautical Dictionary

The *Multilingual Aeronautical Dictionary* is a completely updated and revised edition of a dictionary developed in 1960 by the Advisory Group for Aerospace Research and Development, North Atlantic Treaty Organization (AGARD/NATO). It represents the continued cooperative effort of eminent scientists and engineers from many NATO member-nations. Extensive revisions are based on their expertise in widely diverse fields of aerospace technology. Obsolete terms have been removed, new terms and their definitions included.

- Part I lists terms alphabetically in English with their definitions and reference numbers keyed to Part II. Next to each English definition is the translated equivalent term in German, Italian, Spanish, French, Greek, Dutch, Russian, Turkish, and Portuguese, each with its two-letter identifying code in English.
- Part II contains nine lists of terms in each of the languages other than English. Each term is keyed, by a reference number, to its definition in English, and its equivalent in all the other languages.
- Part III lists abbreviations, symbols, acronyms, and their expanded meanings, in English.

Order: N80-30272

Price: \$123.50

## Latest Directory of Computer Software & Related Technical Reports

The *Directory of Computer Software and Related Technical Reports* is a unique guide to machine-readable software and related technical reports available to the public from Federal agencies. The information contained in the Directory has been compiled in cooperation with more than 100 U.S. agencies. More than 350 programs are described as are the applicable technical reports.

The directory contains five indexes for easy reference, including an Agency Index listing the originating agency for the specific program, and a Subject Index listing all programs by their major subject concepts. In the Abstract Section, a complete abstract entry is found on each software program. Also included in this section are keywords used for indexing and searching, and an Availability Statement to determine if the item can be ordered through NTIS or from the originating agency. Price: \$40. Order: PB80-110232.

For more information on the directory, please telephone (703) 487-4808.



# Special Technology Groups offer unique data to NTIS clients

Special Technology Groups are an important information resource for the NTIS Bibliographic Data Base.

Some Special Technology Groups are called Information Analysis Centers (IACs). These are mainly concerned with the analysis and communication of information relating to the very latest in the state of an art. Some IACs concentrate on the evaluation of cultural, educational, and socio-economic data. The 100 or more federally sponsored IACs in the United States are considered national resources of particular knowledge.

NTIS is the national marketing coordinator for many Special Technology Groups, many of which have been required to recover their costs by making their products and services publicly available.

Usually Special Technology Groups, including IACs, define their operations within three principal areas:

**Inquiry Services:** The custom searching of an information collection relevant to specific queries; combined, by some, with analytical research and evaluation.

**Data Books & Research Reports:** Often these are state-of-the-art reports; that is, the best information available on a subject. Also published in this category are annotated bibliographies, technical guides, and directories of terms and processes.

**Newsletters:** These reflect the latest technical achievements, in brief, as they are observed and recorded for subsequent detailed evaluation; usually available on a subscription basis.

NTIS is the national marketing coordinator for the following Information Analysis Centers.

## **Chemical Propulsion Information Agency**

Covers performance calculations, chemical synthesis programs, combustion studies, propellant formulation efforts, physical and ballistic characterization, rocket design, ground testing of rockets, integration of rockets and flight vehicles, and correlation of flight data with static test data.

Publishes extensively and maintains mailing list for exchange of chemical propulsion technical information.

## **Electromagnetic Compatibility Analysis Center**

Maintains a comprehensive data base, a large-scale computer with appropriate software systems for analysis and data manipulation in spectrum planning, emission and susceptibility characteristics evaluation, and deployment and siting analysis.

## **Energetic Materials Division, Army Armament Research and Development Command**

Covers basic and applied research on explosives and related substances.

Basic and applied research is done on the mechanical, thermal, and electrostatic response of explosives for the purpose of developing better tests and elucidating the initiation process under these stimuli.

Answers inquiries, publishes state-of-the-art reports, bibliographies, indexes, and directories.

### **Infrared Information and Analysis Center**

Covers infrared sources, characteristic radiation from natural and manmade objects; optical properties of materials, infrared detection materials and elements, laboratory components and techniques; infrared spectra; lasers and masers; military infrared systems and components.

Provides references to scientific and technical documents, answers queries on current research and development, answers specific technical questions; publishes bibliographies, state-of-the-art reports; conducts annual Infrared Information Symposia and DOD conference on laser technology.

### **Machinability Data Center**

Covers the evaluation, storage, and dissemination of material removal information; strongly emphasizes engineering evaluation to develop optimized material removal parameters.

Answers technical inquiries concerning material removal, maintains a user file for distribution of information products, including machine data pamphlets and tables on materials of current interest, state-of-the-art reports, technical announcements.

### **Mechanical Properties Data Center**

Covers mechanical properties of structural materials and interacting variables, with major emphasis on metal alloys; maintains data on more than 4,000 specific alloys.

Answers questions, provides special bibliographies and technical evaluations, prepares Aerospace Structural Metals Handbook, issues special publications and inventory reports on the MPDC system.

### **Metals and Ceramics Information Center**

Covers the characteristics and utilization of advanced metals, ceramics, and selected composites.

Answers technical inquiries and requests for literature searches, publishes state-of-the-art reports, handbooks, and two reviews available on subscription; *Review of Metals Technology* and *Review of Ceramic Technology*.

### **Technology Application Center**

Covers heat pipe technology, secondary uses of waste glass, noise pollution, and hydrogen and solar energy.

Answers inquiries. Publishes handbooks, data books, current awareness bulletins, and state-of-the-art reviews.

### **Non-destructive Testing Information Analysis Center**

Coverage includes radiography, acoustics, ultrasonics, magnetics, microwaves, eddy currents, optical and ultrasonic holography, penetrant testing, and optical, thermal, and infrared sensing.

Its 16,000 documents and abstracts range from basic studies in physical sciences for non-destructive testing to applied techniques for examining structures and finished components.

Inquiries, symposia, and literature searches are offered.

### **Nuclear Safety Information Center**

Covers nuclear safety—general criteria, analysis, operating systems, accident analysis, environmental surveys, monitoring and radiation exposure of humans, siting and containment of facilities, transporting and handling of radioactive materials, reactor transients, kinetics and stability, and nuclear instrumentation.

Answers technical inquiries, publishes state-of-the-art reports and bibliographies, and provides current-awareness services.

### **Plastics Technical Evaluation Center**

Covers structural composites, electrical and electronic applications, packaging, mechanical goods applications, microbiological deterioration, test methods and specifications, compatibility, and reactivity.

Answers inquiries, and publishes state-of-the-art reports, bibliographies, indexes, and directories.

### **Reliability Analysis Center**

Covers microelectronic circuit devices including monolithic integrated circuits, metal oxide semiconductor integrated circuits, hybrid circuits, thin film circuits, integrated arrays, and device fabrication, testing, equipment assembly, and operation.

Answers direct user inquiries and publishes technical monographs.

### **Thermophysical & Electronic Properties Information Analysis Center**

Covers 16 thermophysical properties of matter keyed to representative groups: high-temperature solid materials, thermal conductivity, thermal diffusivity, absorptance, reflectance, viscosity, specific heats, and constant pressures.

Answers technical inquiries; makes referrals and literature and data searches; provides technical advisory and consulting services; and reproduces research documents on microfiche. Generates reference data tables; and performs data analyses, syntheses, estimations, recommendations, and predictions.

### **Toxicology Information Response Center**

Covers general scope of toxicology. Concentrates on pesticides, bioenvironmental toxicants, toxic chemicals, food additives, and drugs. Provides literature searches, critical reviews, state-of-the-art reviews, current awareness service, and specialized bibliographies.

# Patent Data Base

The Patent Data Base from the U.S. Patent and Trademark Office, U.S. Department of Commerce is now available through NTIS. It is available in three files: *Full Text*, *Bibliographic*, and *Classification*.

- The *Full Text File* covers August 1970 through the current year. The file contains all wording of each patent.
  - The retrospective portion, 1970-1979, is available as a total file or by calendar year. The total file is on approximately 40 reels of magnetic tape, 4 or 5 reels for each year.
  - The current year file is issued weekly. It contains the information described above for each patent issued during the week. The file is available on an annual subscription/lease basis. Subscribers will receive about 104 tapes a year.
- The *Bibliographic File* covers the same issue periods as the *Full Text File*, but it is a subset of the *Full Text File*, including the patent title, inventor's name, owner of the patent, date of issuance, filing date, abstract, assignee, and other information.
  - The retrospective portion, 1970-1979, is available as a total file or by calendar year. The total file is on approximately 100 reels of magnetic tape, 4 or 5 reels for each year.
  - The current year file is issued weekly. It contains the information described above for each patent issued during the week. The file is available on an annual subscription/lease basis. Subscribers will receive about 52 tapes a year.
- The *Classification File* contains classification information on all patents issued by the Patent and Trademark Office. The file is issued twice each year, at the end of June and at the end of December. Each issuance includes all new patents and reclassification actions. The *Classification File* is available in Classification and/or Patent Number Sequence.

Segments of the *Full Text* or *Bibliographic Files* (mechanical patents, electrical patents, chemical patents, etc.) may be made available if users indicate their interests. Please telephone (703) 487-4808.

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The *NASA Patent Abstracts Bibliography* serves companies, firms, and individuals seeking new, licensable products for the commercial market. It is issued semiannually in two sections: Section I—Abstracts; Section 2—Indexes.

The Abstract Section has six months of annotated references to NASA-owned inventions and applications for patents announced in *Scientific and Technical Aerospace Reports* (STAR) between January-June and July-December.

Each Index Section is cumulative and covers entries for all patent and patent application citations since May 1969 and is also issued semiannually.

Standing Order Service: Section I; Abstracts Only; \$8.50 each; Section II; Cumulative Index; \$12.50 each; Order NASA-SP-7039.

# Government patents catalog is unique; available in 1981

NTIS is pleased to announce its *Catalog of Government Patents*, known during its developmental stages as the *U.S. Government Patent Portfolio Listing*. This unique catalog presents information on thousands of Government-owned inventions, most of which are available for licensing. These inventions have resulted from billions of Federal dollars invested in a variety of research and development projects. The catalog comprises three basic portions:

**Part A.** Patents and patent applications for the period 1966 through 1974.

**Part B.** Specially merged issues with index of *Government Inventions for Licensing for the six-year period 1975 through 1980*.

**Part C.** The continuing weekly publication of *Government Inventions for Licensing* on a current basis.

The patents and patent applications cover all fields of science and technology and should find application in the solution of commercial, manufacturing, and production problems.

**Part A** contains about 16,000 patents and patent applications contained in three hardbound volumes. This basic section, which contains all patents issued to Federal agencies from 1966 through 1974, includes an abstract of each invention and, in some 40%, also includes an illustration. The three volumes of Part A are arranged generally along the lines of the Patent and Trademark Office classification system, as is the Table of Contents.

**Part B** of the *Catalog of Government Patents* covers the years 1975 through 1980. It is planned as a hard bound, two- or three-volume edition with index. The entries are sorted in a unique subject arrangement that includes the Patent and Trademark Office's classification system, plus some specially developed NTIS subcategories. These entries are sorted by Federal agency, by patent application or issued patent, and then listed sequentially by number. Patent applications in this section include only those for which patents have not been subsequently issued. Inventions are indexed both by subject and by agency. Part B is scheduled for sale soon after the first of the year. Buyers of Part A will be notified when Part B is ready for distribution.

**Part C** is already available as the weekly Newsletter, *Government Inventions for Licensing*. Sample copies are available on request.

# New Gov't. inventions offer opportunities to acquire technology

NTIS is the central source for information on all new U.S. Government-owned patents and patent-pending applications. These inventions primarily come out of Government laboratories but also include contractor inventions to which the Government has title.

Information is available on nearly 1,500 new Government inventions annually. (More than 25,000 U.S. Government inventions are now in the NTIS data base.) Cooperating agencies submit their new inventions to NTIS when patent applications are filed with the U.S. Patent and Trademark Office and again when the patents are issued. These inventions are summarized in the NTIS illustrated abstract newsletter, *Government Inventions for Licensing* (see page 29).

New inventions are evaluated by specialists under contract to NTIS to determine their potential for commercial application. The most commercially promising inventions are summarized in *Selected Technology for Licensing*, the publication series available to *NTIS Tech Notes* subscribers (see page 5).

## Information for Innovators is unique new service

A powerful new interdisciplinary information service for innovators is now available from NTIS. *Information for Innovators* uncovers technical and market opportunities for industry by interpreting the innovation potential in existing Federally-sponsored R & D and foreign technology.

Information analysts assemble a strategic combination of multi-disciplinary technical data, reports on available (or possibly competitive) foreign technology, regulatory requirements (domestic and foreign) affecting introduction of new products and processes, assessments of potential social impacts, and techniques for stimulating and managing advanced technology.

The plain language briefs, written for professionals responsible for keeping informed beyond their own fields of expertise, enable you to scan the innovation-relevant cream of 2500 new reports in 20 minutes every two weeks. Each item is linked to available original sources, people and organizations, and other useful data bases.

*Information for Innovators* every other week service is \$85. An additional option, *Innovators Source Library*, simultaneously provides in microfiche all original reports on which each issue is based for \$365. Use the order form on page 41.



# Selected engineering reports show wide range available from NTIS

About twenty-five percent of the information being added to the NTIS Bibliographic Data Base comes directly from one of the engineering disciplines. Some 300,000 titles (from 1964 onward) are relevant to engineering interests. It isn't practical, in a catalog like this one, to list enough research reports to really depict the scope of the collection but the following selections are some of the more popular engineering related titles.

## CHEMICAL ENGINEERING

### **Evaluation of Technology for the Recovery of Metallurgical-Grade Alumina From Coal Ash. 1979**

PB-299 567                      15p                      PC A02/MF A01

### **Pilot Plant Gasification Test on Biomass Fuels. 1979**

PB-299 077                      79p                      PC A05/MF A01

### **The Purification and Utilization of the Sulphite Spent Liquor by the Microbiological Way. Part III and IV. 1978**

PB-298 950                      128p                      PC A07/MF A01

Part I and II 1978

PB-298 949                      78p                      PC A05/MF A01

### **Disposal of Dilute Pesticide Solutions. 1979**

PB-297 985                      113p                      PC A06/MF A01

### **Wastewater Treatment in Coal Conversion. 1979**

PB-297 587                      287p                      PC A13/MF A01

### **Recovery, Processing, and Utilization of Gas from Sanitary Landfills. 1979**

PB-293 165                      147p                      PC A07/MF A01

### **Design Guidelines for an Optimum Scrubber System. 1979**

PB-292 327                      94p                      PC A05/MF A01

### **A Review of Standards of Performance for New Stationary Sources-Sulfuric Acid Plants. 1979**

PB-292 278                      90p                      PC A05/MF A01

### **Industrial Process Profiles for Environmental Use: Chapter 13. Plasticizers Industry. 1977**

PB-291 642                      70p                      PC A04/MF A01

### **Chapter 12. The Explosives Industry. 1977**

PB-291 641                      122p                      PC A06/MF A01

### **Chapter 10. Plastics and Resins Industry. 1977**

PB-291 640                      326p                      PC A15/MF A01

### **Chapter 2. Oil and Gas Production Industry 1977**

PB-291 639                      112p                      PC A06/MF A01

### **Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products. 1978**

PB-290 580                      136p                      PC A07/MF A01



## INDUSTRIAL ENGINEERING

**Potential for Energy Recovery from Humid Air Streams.** 1979

PB-300 892 13p PC A02/MF A01

**Grain-Dust Pelleting Costs and Capital Requirements for Stationary and Portable Plants.** 1979

PB-300 690 35p PC A03/MF A01

**Selection and Application Guide to Commercial Intrusion Alarm Systems.** 1979

PB-300 604 45p PC A03/MF A01

**Process Control in the Construction Industry.** 1978

PB-298 835 69p PC A04/MF A01

**A Comparison of American and European Ultrasonic Testing Standards.** 1979

PB-298 809 74p PC A04/MF A01

**Proceedings of the Meeting of the Mechanical Failures Prevention Group (28th), Held at San Antonio, TX. Nov. 28-30, 1978: Report on MFPG Detection, Diagnosis, and Prognosis.** 1979

PB-297 399 371p PC A16/MF A01

**Ion Implantation as a New Surface Treatment Technology.** 1979

AD-A070 379 52p PC A04/MF A01

**Vibration Isolation: Use and Characterization.** 1979

PB-296 182 132p PC A07/MF A01

**Selecting Large Pumping Units.** 1978

PB-296 178 43p PC A03/MF A01

**A State-of-Art Survey on Dispatching Rules for Manufacturing Job Shop Operations.** 1977

PB-295 925 69p PC A04/MF A01

**Fabric Filter Model Format Change: Volume I. Detailed Technical Report.** 1979, Portions of this document are not fully legible.

PB-293 551 181p PC A09/MF A01

**Assessment of State-of-the-Art of In-Service Inspection Methods for Graphite Epoxy Composite Structures on Commercial Transport Aircraft.** 1979

N79-17252 56p PC A04/MF A01

**Foreign Development and Application of Automated Controls for the Steel Industry.** 1979

NTISUB/E/280-001 21p PC E02/MF A01

**Inelastic Shear Stresses and Strains in the Adhesives Bonding Lap Joints Loaded in Tension or Shear (Computer Program)** 1979

ESDU-79016 41p PC E99

**Losses Caused by Friction in Straight Pipes with Systematic Roughness Elements.** 1979

ESDU-79014 44p PC E99

**Elastic Stress Concentration Factors. Rectangular Notch in the Edge of a Wide Flat Plate in Tension.** 1979

ESDU-79008 2p PC E99

**Design of Disc Cams with Translating Roller Followers: Calculation Methods.** 1979

ESDU-79007 33p PC E99

**Contact Phenomena. I: Stresses, Deflections and Contact Dimensions for Normally-Loaded Unlubricated Elastic Components. 1978**

ESDU-78035 49p PC E99

**State-of-the-Art of PATREC: A Computer Code for the Evaluation of Reliability and Availability of Complex Systems 1977**

CEA-CONF-4127 11p PC A02/MF A01

**Electrical Equipment Certification in the Federal Republic of Germany (2nd Edition). 1979**

BTHE-020333 56p PC E99

**Engineering Design Handbook. Dielectric Embedding of Electrical or Electronic Components. 1979**

AD-A074 139/7 177p PC\* 12.50/MF 12.50

**Engineering Design Handbook. Joining of Advanced Composites. 1979**

AD-A072 362 147p PC E07/MF E07

**Nondestructive Evaluation of Fiber Reinforced Epoxy Composites: A State-of-the-Art Survey. 1979**

AD-A071 973 198p MF A01

**MNOS BORAM Manufacturing Methods and Technology Project. 1979**

AD-A071 413 39p PC A03/MF A01

**Effect of Variances and Manufacturing Tolerances on the Design Strength and Life of Mechanically Fastened Composite Joints. 1978**

AD-A069 170 97p PC A05/MF A01

## **BIOENGINEERING**

**Measurements of the Performance Parameters of Gamma Cameras: Part II 1979**

PB-301 041 64p PC A04/MF A01

**A Review of Research Literature and Federal Involvement Relating to Selected Obstetric Practices. 1979**

PB-300 377 98p PC A05/MF A01

**Anthropometry and Biomechanics of Selected Populations. 1977**

PB-299 287 67p PC A04/MF A01

**Hemodialysis/Hemofiltration: A Comparison of Medical, Technical and Cost Factors. 1979**

PB-298 970 98p PC A05/MF A01

**Semiconductor Measurement Technology: Reliability Technology for Cardiac Pacemakers III - A Workshop Report. 1979**

PB-296 731 137p PC A07/MF A01

**Costs and Benefits of Electronic Fetal Monitoring: A Review of the Literature. 1979**

PB-294 690 39p PC A03/MF A01

**Workshop in Purchase Specifications and Performance Evaluation of Radiologic Imaging Equipment. Proceedings and Supplement. 1978**

PB-287 985 262p PC A12/MF A01

**Annotated Bibliography on Human Factors in Software Development. 1979**

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(Continued from page 38)

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